

CC - DWPC/FOS/RU

COMPLIANCE SAMPLING INSPECTION  
Supplemental Notes

EPA Region 5 Records Ctr.



307712

REPUBLIC STEEL CORPORATION  
NPDES #IL 0002593

DATE:

December 22, 1981

Pursuant to the April 3, 1979 Agency memo which referred to "Laboratory Techniques Used", the following questions are omitted on the attached Form 3560-3:

Section K:

Part 2, The main question for the Section

Part 2, (d), ii, iv;

Part 3, The main question for the Section

Part 3, (a), (b), (d), (e)

Additionally, Section G (a) iv and (e) are omitted by Agency directive.

Narrative

Facility

Republic Steel is a fully integrated steel producing facility located at 11600 South Burley Avenue in Chicago on the east bank of the Calumet River. The facility includes coke ovens, a blast furnace, electric furnaces, QBOP furnaces, and finishing mills. Water pollution control is maintained primarily by recycling process waters. The blowdowns from the recycle systems and the sanitary wastes are discharged to the Metropolitan Sanitary District of Greater Chicago (MSDGC). In addition, there are two surface water discharges consisting of non-contact cooling water and uncontaminated stormwater runoff.

NPDES Permit

NPDES Permit #IL 0002953 was issued January 26, 1979, and expired on September 30, 1980. On April 2, 1980, the IEPA requested that Republic Steel (RS) complete Standard Form C, which was submitted on April 28, 1980.

On October 28, 1980, the IEPA requested that RS submit information according to Section 5, Part C, which RS submitted on January 1, 1981. Since that date, no further correspondence has ensued. According to the IEPA Permit Section, reissuance of the NPDES permit is being held in abeyance pending finalization of the Federal Iron and Steel Guidelines by the USEPA. In the meantime, RS continues to operate under the permit as issued on January 26, 1979, and has apparently met its reapplication responsibilities in a timely manner.

### Outfalls

NPDES Permit No. IL 0002593 lists five outfalls which discharge to the Calumet River. Three of these outfalls, 001, 002, and 005, are inactive but remain in existence. Should they ever be used, the Permit requires that they be monitored for pH, temperature, suspended solids, total iron, zinc, lead, hexavalent and trivalent chromium, oil, and total suspended solids. The remaining outfalls are 003 and 004. Outfall 003 is uncontaminated storm water runoff with no monitoring requirements. Outfall 004 is non-contact cooling water with monitoring required for flow and temperature.

### Total Recycle System

The total recycle system consists of three treatment systems. Republic Steel refers to one of the systems as two plants (No. 1 and No. 2) thereby causing the number of plants listed under IEPA construction and operation permits to be four.

Plant 1 and Plant 2 are parallel clarifiers with a common rapid mix tank for the addition of lime, ferric chloride, and polymer. Each clarifier has a design flow of 4500 gpm. The influent consists of blowdown from the finishing mills process water recycle system, pickle liquor rinse waters, and backwash from plant 4. The effluent combines with the effluent from plant 4 and is recycled as described below.

Plant 4 consists of fourteen deep bed multi-media filters which treat all wastewater from the primary mills (blooming and billet) at a design flow of 36.2 MGD. The effluent continues with the effluent from plants 1 and 2 and, depending on the temperature, may be cooled through a cooling tower or recycled directly. The combined effluent is pumped to pumphouse #2, where makeup water from the Calumet River can be added prior, and then is recycled to the mills.

Plant 3 is a 3700 gpm clarifier preceded by a rapid mix tank for the addition of ferric chloride and lime. Chlorine is added to the clarifier

influent to control cyanide concentrations. The flow originates from blast furnace flue gas cleaning operations, and following treatment is immediately recycled with blowdown discharged to the MSDGC.

#### Monitoring

NPDES monitoring is performed as required with the addition of non-required monitoring at several locations for internal reasons. Those locations are the plant 1 and 2 effluent, outfall 002, plant 4 effluent, outfall 004, plant 3 effluent, plant 3 blowdown and the discharge to the MSDGC sewer. Also, several non-required parameters are monitored at discharge 004.

One exception to the NPDES monitoring is that the required flow measurement type at discharge 004 specifies "grab", Republic Steel uses an estimate based on pump capacities and elapsed times. This procedure is described in a letter to the IEPA Permit Section dated November 22, 1978, which confirms a discussion held on November 17, 1978. There is no IEPA memo on file which confirms or denies that the flow measurement method is acceptable.

All the monitoring data, required and non-required, is submitted monthly on a permittee-designed computer print-out. The computer operation serves as a measure of quality - control for data entries.

#### Residuals Management

At this time, all the residual sludges removed from the total recycle system are dewatered with a vacuum filter. The filter cake is then stored on site for future reclamation. Formerly, RS processed the filter cake in a briquetting plant, but design problems have forced abandonment of that equipment. The intent is to design and build another facility for a similar purpose.

JWR:wn

ic Steel Corporation  
 Compliance Sampling Inspection  
 December 22, 1981

\* Sample Results

Sample Site and Type

| Parameter **      | 004 - 24<br>Hr. Comp. | 004<br>Grab | Intake P 2<br>24 Hr. Comp. | Blast Furnace<br>Blowdown - Grab | Primary Recycle<br>Blowdown - Grab |
|-------------------|-----------------------|-------------|----------------------------|----------------------------------|------------------------------------|
| pH                | 8.2                   | 8.2         | 8.2                        | 8.1                              | 8.0                                |
| BOD               | 5                     |             |                            | 43                               |                                    |
| COD               | 7                     | 8           | 7                          | 0.034                            | 6                                  |
| Phenols           | 0.000                 | 0.000       | 0.000                      | 22                               | 0.000                              |
| TDS               | 312                   | 297         | 313                        | 0.004                            |                                    |
| TSS               | 9                     | 11          | 5                          | 0.0                              | 5                                  |
| Arsenic           | 0.001                 | 0.001       | 0.001                      | 0.7                              | 0.001                              |
| Barium            | 0.01                  | 0.0         | 0.0                        | 0.00                             | 0.00                               |
| Boron             | 0.3                   | 0.3         | 0.3                        | 0.00                             | 1.0                                |
| Cadmium           | 0.00                  | 0.00        | 0.00                       | 0.00                             | 0.00                               |
| CR+3              | 0.00                  | 0.00        | 0.00                       | 0.00                             | 0.00                               |
| CR+6              | 0.00                  | 0.00        | 0.00                       | 0.00                             | 0.00                               |
| Copper            | 0.00                  | 0.00        | 0.00                       | 0.00                             | 0.00                               |
| Cyanide           |                       |             |                            | 0.12                             | 0.01                               |
| Iron (T)          | 0.3                   | 0.6         | 0.4                        | 2.5                              | 0.3                                |
| Lead              | 0.00                  |             | <0.003                     | 0.32                             | 0.18                               |
| Manganese         | 0.03                  | 0.06        | 0.04                       | 1.38                             | 0.11                               |
| Nickel            | 0.0                   | 0.0         | 0.0                        | 0.0                              | 0.0                                |
| Selenium          | 0.00                  | 0.00        | <0.001                     | 0.003                            | 0.003                              |
| Silver            | 0.00                  | 0.00        | 0.00                       | 0.00                             | 0.00                               |
| Zinc              | 0.0                   | 0.0         | 0.0                        | 0.7                              | 0.1                                |
| Vol. SS           | 7                     |             |                            | 13                               |                                    |
| TS/EC             | 312                   | 297         | 313                        |                                  | 403                                |
| ROE               | 296                   |             |                            | 968                              |                                    |
| Ammonia-N         |                       |             | 0.28                       | 34.0                             | 0.36                               |
| Nitrate + Nitrite |                       |             | 1.8                        | 0.2                              | 8.0                                |
| Phosphorous       | 0.03                  |             | 0.02                       | 0.22                             | 2.4                                |
| Chloride          | 57                    | 57          | 56                         | 360                              | 0.00                               |
| Fluoride          | 0.3                   |             | 0.29                       | 14.3                             | 77                                 |
| Sulfate           | 57                    | 58          | 51                         | 98                               | 0.65                               |

\*Expressed as mg/l except pH is standard units

JWR:gkw

PAGE 1 OF 4

## SECTION B - Effluent Characteristics (Additional sheets attached \_\_\_\_\_)

| PARAMETER/<br>OUTFALL       |                    | MINIMUM | AVERAGE | MAXIMUM | ADDITIONAL        |
|-----------------------------|--------------------|---------|---------|---------|-------------------|
| PH<br>SV                    | SAMPLE MEASUREMENT | 8       |         | 8.3     | 4/31 GRAB         |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| SUSPENDED<br>SOLIDS<br>MG/L | SAMPLE MEASUREMENT | 6       | 7       | 7       | 2/31 24 HR. COMP. |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| AMMONIA<br>MG/L             | SAMPLE MEASUREMENT |         |         |         | 0/31              |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| CYANIDE<br>MG/L             | SAMPLE MEASUREMENT | 0.05    | 0.055   | 0.06    | 2/31 24 HR. COMP. |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| FLUORIDE<br>MG/L            | SAMPLE MEASUREMENT |         |         |         | 0/31              |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| IRON<br>(TOTAL)             | SAMPLE MEASUREMENT |         |         |         | 0/31              |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| IRON<br>(DISSOLVED)         | SAMPLE MEASUREMENT |         |         |         | 0/31              |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
| PHENOL<br>UG/L              | SAMPLE MEASUREMENT | 6       | 7       | 8       | 2/31 24 HR COMP.  |
|                             | PERMIT REQUIREMENT |         |         |         | NOT REQUIRED      |
|                             | SAMPLE MEASUREMENT |         |         |         |                   |
|                             | PERMIT REQUIREMENT |         |         |         |                   |
|                             | SAMPLE MEASUREMENT |         |         |         |                   |
|                             | PERMIT REQUIREMENT |         |         |         |                   |

thru L: Complete on all inspections, as appropriate. N/A = Not Applicable

PERMIT NO.  
140002593

ION F - Facility and Permit Background

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY  
(Including City, County and ZIP code)

N/A

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE

3-10-80

FINDINGS

EFFLUENT EXCURSIONS - OUTFALL COI  
PARSHALL FLUME SUBMERGED

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. ☒ YES ☐ NO ☐ N/A (Further explanation attached \_\_\_\_\_)

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:

|  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| (i) SAMPLING DATE, TIME, EXACT LOCATION                                    | <input checked="" type="checkbox"/> YES   | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| (ii) ANALYSES DATES, TIMES   | <input checked="" type="checkbox"/> YES   | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| (iii) INDIVIDUAL PERFORMING ANALYSIS                                       | <input checked="" type="checkbox"/> YES   | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| (iv) ANALYTICAL METHODS/TECHNIQUES USED                                    | * <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| (v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data) | <input checked="" type="checkbox"/> YES   | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g. continuous monitoring instrumentation, calibration and maintenance records).

☒ YES ☐ NO ☐ N/A

(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.

☒ YES ☐ NO ☐ N/A

(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.

☒ YES ☐ NO ☐ N/A

(e) QUALITY ASSURANCE RECORDS KEPT.

\* ☐ YES ☐ NO ☐ N/A

(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.

☐ YES ☐ NO ☒ N/A

SECTION H - Permit Verification

INSPECTION OBSERVATIONS VERIFY THE PERMIT. ☒ YES ☐ NO ☐ N/A (Further explanation attached \_\_\_\_\_)

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.

☒ YES ☐ NO ☐ N/A

(b) FACILITY IS AS DESCRIBED IN PERMIT.

☒ YES ☐ NO ☐ N/A

(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.

☒ YES ☐ NO ☐ N/A

(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.

☒ YES ☐ NO ☐ N/A

(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.

☐ YES ☐ NO ☒ N/A

(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.

☒ YES ☐ NO ☐ N/A

(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.

☒ YES ☐ NO ☐ N/A

(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.

☒ YES ☐ NO ☐ N/A

(i) ALL DISCHARGES ARE PERMITTED.

☒ YES ☐ NO ☐ N/A

SECTION I - Operation and Maintenance

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ☒ YES ☐ NO ☐ N/A (Further explanation attached \_\_\_\_\_)

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.

☒ YES ☐ NO ☐ N/A

(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.

☒ YES ☐ NO ☐ N/A

(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.

☐ YES ☐ NO ☒ N/A

(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED.

☒ YES ☐ NO ☐ N/A

(e) ALL TREATMENT UNITS IN SERVICE.

☒ YES ☐ NO ☐ N/A

(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.

☒ YES ☐ NO ☐ N/A

(g) QUALIFIED OPERATING STAFF PROVIDED.

☒ YES ☐ NO ☐ N/A

(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.

☒ YES ☐ NO ☐ N/A

(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.

☒ YES ☐ NO ☐ N/A

(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.

☒ YES ☐ NO ☐ N/A

(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.

☐ YES ☐ NO ☒ N/A

(l) SPCC PLAN AVAILABLE.

☒ YES ☐ NO ☐ N/A

(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Dates \_\_\_\_\_)

☐ YES ☐ NO ☒ N/A

(n) ANY BY-PASSING SINCE LAST INSPECTION.

☐ YES ☒ NO ☐ N/A

(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.

☐ YES ☒ NO ☐ N/A

\* SEE SUPPLEMENTAL NOTES

PERMIT NO.  
160002593

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE. ☐ YES ☐ NO ☒ N/A (Further explanation attached \_\_\_\_\_)

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.).
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 - Flow measurement (Further explanation attached \_\_\_\_\_) SEE NARRATIVE

PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. ☐ YES ☒ NO ☐ N/A

DETAILS:

- (a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED. FLUME SUBMERGED ☐ YES ☒ NO ☐ N/A
- TYPE OF DEVICE: ☐ WEIR ☒ PARSHALL FLUME ☐ MAGMETER ☐ VENTURI METER ☐ OTHER (Specify \_\_\_\_\_)
- (b) CALIBRATION FREQUENCY ADEQUATE. (Date of last calibration \_\_\_\_\_) ☐ YES ☐ NO ☒ N/A
- (c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED. ☐ YES ☐ NO ☒ N/A
- (d) SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED. ☐ YES ☐ NO ☒ N/A
- (e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES. ☐ YES ☐ NO ☒ N/A

Part 2 - Sampling (Further explanation attached \_\_\_\_\_)

PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. \* ☐ YES ☐ NO ☐ N/A

DETAILS:

- (a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. ☒ YES ☐ NO ☐ N/A
- (b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT. ☒ YES ☐ NO ☐ N/A
- (c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. ☒ YES ☐ NO ☐ N/A
- IF NO, ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY \_\_\_\_\_
- (d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE. ☒ YES ☐ NO ☐ N/A
- (i) SAMPLES REFRIGERATED DURING COMPOSITING ☒ YES ☐ NO ☐ N/A
- (ii) PROPER PRESERVATION TECHNIQUES USED \* ☐ YES ☐ NO ☐ N/A
- (iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT ☒ YES ☐ NO ☒ N/A
- (iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3 \* ☐ YES ☐ NO ☐ N/A
- (e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT. ☒ YES ☐ NO ☐ N/A
- (f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT. ☒ YES ☐ NO ☐ N/A

Part 3 - Laboratory (Further explanation attached \_\_\_\_\_)

PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. \* ☐ YES ☐ NO ☐ N/A

DETAILS:

- (a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. (40 CFR 136.3) \* ☐ YES ☐ NO ☐ N/A
- (b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED \* ☐ YES ☐ NO ☐ N/A
- (c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED. ☒ YES ☐ NO ☐ N/A
- (d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. \* ☐ YES ☐ NO ☐ N/A
- (e) QUALITY CONTROL PROCEDURES USED. \* ☐ YES ☐ NO ☐ N/A
- (f) DUPLICATE SAMPLES ARE ANALYZED. 100 % OF TIME. ☒ YES ☐ NO ☐ N/A
- (g) SPIKED SAMPLES ARE USED. 100 % OF TIME. ☒ YES ☐ NO ☐ N/A
- (h) COMMERCIAL LABORATORY USED. BCS only ☒ YES ☐ NO ☐ N/A
- (i) COMMERCIAL LABORATORY STATE CERTIFIED. ☐ YES ☐ NO ☒ N/A

LAB NAME NALCO

LAB ADDRESS BUTTERFIELD RD., OAK BROOK, IL.



PERMIT NO.  
1L0002593

## SECTION L - Effluent/Receiving Water Observations (Further explanation attached \_\_\_\_\_)

| OUTFALL NO. | OIL SHEEN | GREASE | TURBIDITY | VISIBLE FOAM | VISIBLE FLOAT SOL | COLOR | OTHER |
|-------------|-----------|--------|-----------|--------------|-------------------|-------|-------|
| 004         | PRESENT   | NONE   | OK        | NONE         | NONE              | OK    |       |
|             |           |        |           |              |                   |       |       |
|             |           |        |           |              |                   |       |       |
|             |           |        |           |              |                   |       |       |
|             |           |        |           |              |                   |       |       |
|             |           |        |           |              |                   |       |       |

(Sections M and N: Complete as appropriate for sampling inspections)

## SECTION M - Sampling Inspection Procedures and Observations (Further explanation attached \_\_\_\_\_)

- ☒ GRAB SAMPLES OBTAINED  
☒ COMPOSITE OBTAINED  
☐ FLOW PROPORTIONED SAMPLE  
☒ AUTOMATIC SAMPLER USED  
☒ SAMPLE SPLIT WITH PERMITTEE  
☒ CHAIN OF CUSTODY EMPLOYED  
☒ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

REFRIGERATION T

COMPOSITING FREQUENCY \_\_\_\_\_ PRESERVATION CHEMICAL PRESERVATIVES

SAMPLE REFRIGERATED DURING COMPOSITING: ☒ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE YES

## SECTION N - Analytical Results (Attach report if necessary)

SEE ATTACHED SUMMARY AND LABORATORY REPORTS

03389 DEC 23 1981

004 G

WASTE TREATMENT WORKS EFFLUENT SAMPLING FORM

SAMPLE COLLECTED BY

J. RAEVUORI

LOCATION OF SAMPLING POINT

REPUBLIC STEEL CORP.

BASIN  
DES PLAINES ADDED

SUB-BASIN (IF NONE ENTER "DIRECT")  
GRAND CALUMET R.

TRIBUTARY  
CALUMET R.

MINOR TRIBUTARY

SEND ORIGINAL OF RESULTS TO: MAYWOOD

SUB-BASIN OFFICE

PERFORMANCE MEASUREMENT SECTION, SPRINGFIELD

SEND COPY OF EDP SERVICES RESULTS TO: SECTION, SPRINGFIELD

CARD COL.

CARD NO. 1

CARD COL.

CARD NO. 2

CARD COL.

CARD NO. 3

2-5 H A A

BASIN CODE

6-7 15

PLANT OR STATION NO.

8-10 032

FIPS COUNTY CODE (USE ONLY FOR PL.)

11-17 C003389

LAB ID NO.

11-17 C003389

LAB ID NO.

11-17 C003389

LAB ID NO.

18 X SAMPLE TYPE CODE (SEE LIST BELOW)

18 X SAMPLE TYPE CODE

18 X SAMPLE TYPE CODE

19-20 81 YEAR

21-22 12 MONTH

23-24 22 DAY

25-26 1 HOUR (NEAREST)

27 P TIME OF DAY (A.M./P.M.)

28-30 WATER TEMPERATURE (DEG. F.)

31-33 FIELD D.O.

PH (UNITS) 8.2

TOTAL PHOSPHORUS 34-36

AVG. DOD. 48-44

C.O.D. 45-46

PHENOLS 0.0000

49-52 FICAL COL. (NO./100ML)

AMMONIA N 53-59

60-63

NITRATE + NITRATE AS N 64-66

ORGANIC N 67-69

TOTAL N 70-72

T.D.S./E.C. 297

73-76

TOTAL SUSP. SOLIDS 11

77-80

SAMPLE TYPE CODES:

- A = DOMESTIC WASTE ONLY
- E = INDUSTRIAL WASTE ONLY
- I = MIXED DOMESTIC & INDUSTRIAL WASTE
- S = STREAM, LAKE, OR RECEIVING WATER QUALITY
- T = MINE DRAINAGE OR WASTE
- X = OTHER OR TYPE UNKNOWN

SIGN BELOW FOR EFFLUENT SAMPLE

TRANSPORTED BY John Pomeroy

RECEIVED BY TIME

TRANSPORTED BY

ALL RESULTS EXPRESSED AS MG/L EXCEPT WHERE OTHERWISE STATED.

PHYSICAL OBSERVATIONS & COMMENTS (ABNORMAL COLOR, ODOR, FLOATING MATTER, OIL, SLUDGE, TURBIDITY, WEATHER), LOCATION OF SAMPLING POINT:

34' F, OVERCAST

OIL FILM - IN DISCHARGE

FOR LABORATORY USE ONLY

SAMPLE RECEIVED BY R. Modi

DATE REC'D 12-23-81 TIME REC'D 10:30

DATE ANALYSES COMPLETED

DATE RESULTS FORWARDED FEB. 10, 1982

TOTAL TESTS REQUESTED 21 TESTS RUN

LAB SECTION Chicago SUPERVISOR Daugherty

03387 DEC 23 1981

WASTE TREATMENT WORKS EFFLUENT SAMPLING FORM

SAMPLE COLLECTED BY

LOCATION OF SAMPLING POINT

J. RAEVUORI

REPUBLIC STEEL CORP

24 HR. COMPOSITE

OUTFALL 004

BASIN

SUB-BASIN (IF NONE ENTER "DIRECT")

TRIBUTARY

MINOR TRIBUTARY

OES PLAINES ADDED

GRAND CALUMET R.

CALUMET R.

SEND ORIGINAL OF RESULTS TO:

MAYWOOD

SUB-BASIN OFFICE

PERFORMANCE MEASUREMENT SECTION, SPRINGFIELD

SEND COPY OF EDP SERVICES RESULTS TO: SECTION, SPRINGFIELD

CARD COL.

CARD NO. 1

CARD COL.

CARD NO. 2

CARD COL.

CARD NO. 3

2-5 H A A

BASIN CODE

6-7 L 5

PLANT OR STATION NO.

8-10 0 3 2

FIPS COUNTY CODE (USE ONLY FOR PL)

11-17 0003387

LAB ID NO.

11-17 0003387

LAB ID NO.

11-17 0003387

LAB ID

18 X SAMPLE TYPE CODE (SEE LIST BELOW)

18 X SAMPLE TYPE CODE

18 X SAMPLE TYPE CODE

19-20 8 1 YEAR

21-22 1 2 MONTH

23-24 2 2 DAY

25-26 HOUR IN NEAREST

27 TIME OF DAY (A.M., P.M.)

28-30 WATER TEMPERATURE (DEG. F.)

31-33 FIELD D.O.

PH (UNITS)

TOTAL PHOSPHORUS

AVG. BOD.

C.O.D.

PHENOLS

AMMONIA N

NITRATE + NITRITE AS N

ORGANIC N

TOTAL N

T.O.S./E.C.

TOTAL SUSP. SOLIDS

ARSENIC

BARIUM

BORON

CADMIUM

CHROMIUM (HEX)

CHROMIUM (TRI)

CHROMIUM (TOTAL)

COPPER

CYANIDE

IRON (TOTAL)

IRON (DISSOLVED)

LEAD

MANGANESE

MERCURY (MICROGM/L)

NICKEL

SELENIUM

SILVER

ZINC

PLANKTON (NO. ML)

FLUORIDE

CHLORIDE

SULFATE AS SO<sub>4</sub>

TOTAL SULFUR AS S

OIL

M.B.A.S.

CARBON CHLOROFORM EXTRACT

TURBIDITY (UNITS)

RESIDUE ON EVAPORATION

VOLATILE SUSP. SOLIDS

COLOR (UNITS)

HARDNESS

ALKALINITY

TOTAL ACIDITY

FREE ACIDITY

OTHER TESTS REQUIRED RESULT

ALL RESULTS EXPRESSED AS MG/L EXCEPT WHERE OTHERWISE STATED.

PHYSICAL OBSERVATIONS & COMMENTS (ABNORMAL COLOR, ODOR, FLOATING MATTER, OIL SLUDGE, TURBIDITY, WEATHER), LOCATION OF SAMPLING POINT:

AUTOMATIC 24 HR COMPOSITE BY PERMITTEE

SAMPLE TYPE CODES:

- A = DOMESTIC WASTE ONLY
- E = INDUSTRIAL WASTE ONLY
- I = MIXED DOMESTIC & INDUSTRIAL WASTE
- S = STREAM, LAKE, OR RECEIVING WATER QUALITY
- T = MINE DRAINAGE OR WASTE
- X = OTHER OR TYPE UNKNOWN

SIGN BELOW FOR EFFLUENT SAMPLE

TRANSPORTED BY

RECEIVED BY

TIME

TRANSPORTED BY

FOR LABORATORY USE ONLY

SAMPLE RECEIVED BY R. Modi

DATE REC'D 12-23-81 TIME REC'D 10-30

DATE ANALYSES COMPLETED

FEB. 10, 1982

DATE RESULTS FORWARDED

TOTAL TESTS REQUESTED 28

TESTS RUN

LABORATORY CHICAGO

P2

## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

03388 DEC23 SPECIAL ANALYSIS FORM

Time Collected 8 AM to 8 AMSub-Basin GRAND CALUMET R.Date Collected 12-21-81 to 12-22-81Collector J. RAEVORIFacility Name: REPUBLIC STEEL CORP. Facility Number:File Town CHICAGO

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location)

INTAKE WATER FROM PUMPHOUSERECEIVED  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
FEB 16 1982

Physical Observations, Remarks:

24 HR. AUTOMATIC COMPOSITE BY PERMITTEEFIELD POLLUTION CONTROL  
FIELD POLLUTION CONTROL - REG. 2

| Flow | Field Dissolved Oxygen | Field pH | Field Temp. |
|------|------------------------|----------|-------------|
|------|------------------------|----------|-------------|

0.001 Arsenic

Coliform/100ml

BOD

0.0 BariumFecal Coliform  
100 ml7[BOD]0.3 BoronFecal Strep  
100 ml313[TS/EC]0.00 Cadmium

Algae (Total) /ml

5[Susp. Solids]0.00 Copper0.28 Ammonia (N)

Vol. Susp. Solids

0.00 Chromium (tri)

Organic Nitrogen (N)

8.2[pH (units)]0.00 Chromium (hex)1.8 Nitrate + Nitrite (N)

Turbidity (JTU)

0.4 Iron (Total)0.02 Phosphorus (P)

Hardness

Iron (Dissolved)56 Chloride

Alkalinity

<0.03 Lead0.29 Fluoride

Total Acidity

0.04 Manganese51 Sulfate

Free Acidity

Mercury (ppb)0.01 Cyanide

Oil

0.0 Nickel

MBAS

Other (Specify)

<0.001 Selenium0.000 Phenol (ppm)0.00 Silver0.0 Zinc

Results in mg/l unless otherwise noted.

|                            |
|----------------------------|
| Transported by: <u>JWR</u> |
| Received by: _____         |
| Transported by: _____      |
| Received by: _____         |

FOR LAB USE ONLY

Lab Number: 003388 Rec'd by: R. modi.

Date sample rec'd: 12-23-81 Time: 10:30 AM

Date analysis completed: \_\_\_\_\_

Date results forwarded: FEB. 10. 1982

Total Tests requested: 26 Tests run: \_\_\_\_\_

Chicago

PR

## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

## SPECIAL ANALYSIS FORM

03390 DEC 23 1981

Time Collected 12:30 PMSub-Basin GRAND CALUMET R.Date Collected 12-22-81Collector J. RAENVORIFacility Name: REPUBLIC STEEL CORP. Facility Number:

File Town

Stream Name(s) CHICAGO

Stream Code:

Source of Sample: (Exact Location)

PRIMARY RECYCLE SYSTEM BLOWDOWNRECEIVED  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
FEB 16 1982  
LABORATORY CONTROL  
CHICAGO, ILL. 60601-1002

Physical Observations, Remarks:

GRAB SAMPLE

| Flow | Field Dissolved Oxygen | Field pH | Field Temp. |
|------|------------------------|----------|-------------|
|------|------------------------|----------|-------------|

0.00 ArsenicColiform/100mlBOD0.0 BariumFecal Coliform6COD1.0 BoronFecal Strep403TS/EC0.00 CadmiumAlgae (Total) /ml5Susp.Solids0.00 Copper0.36 Ammonia (N)Vol.Susp.Solids0.00 Chromium (tri)Organic Nitrogen (N)8.0pH (units)0.00 Chromium (hex)2.4 Nitrate + Nitrite(N)Turbidity (JTU)0.3 Iron (Total)0.00 Phosphorus (P)HardnessIron (Dissolved)77 ChlorideAlkalinity0.18 Lead0.65 FluorideTotal Acidity2.11 Manganese110 SulfateFree AcidityMercury (ppb)0.01 CyanideOil0.0 NickelMBASOther (Specify)0.003 Selenium0.000 Phenol (ppm)2.00 Silver1.1 ZincResults in mg/l unless  
otherwise noted.

2% Recycled Paper

|                            |
|----------------------------|
| Transported by: <u>JWR</u> |
| Received by: _____         |
| Transported by: _____      |
| Received by: _____         |

FOR LAB USE ONLY  
 Lab Number: 003390 Rec'd by: R. Modi  
 Date sample rec'd: 12-23-81 Time: 10:30 AM  
 Date analysis completed: \_\_\_\_\_  
 Date results forwarded: FEB. 10. 1982  
 Total Tests requested: 26 Tests run: \_\_\_\_\_  
 Lab Section: Chic

BF

## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

## SPECIAL ANALYSIS FORM

03391 DEC23

Time Collected 12:30 PMSub-Basin GRAND CALUMET R.Date Collected 12-22-81Collector J. RAEVOR

Facility Name:

Facility Number:

File Town

REPUBLIC STEEL CORPCHICAGO

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location)

BLAST FURNACE BLOWDOWN

Physical Observations, Remarks:

GRAB SAMPLERECEIVED  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
FEB 16 1982

| Flow | Field Dissolved Oxygen | Field pH | Field Temp. |
|------|------------------------|----------|-------------|
|------|------------------------|----------|-------------|

0.004 ArsenicColiform/100mlBOD0.0 BariumFecal Coliform43COD0.7 BoronFecal StrepTS/EC0.00 CadmiumAlgae (Total) /ml22Susp. Solids0.00 Copper34.0Ammonia (N)13Vol. Susp. Solids0.00 Chromium (tri)Organic Nitrogen (N)8.1pH (units)0.00 Chromium (hex)0.2Nitrate + Nitrite (N)Turbidity (JTU)2.5 Iron (Total)0.22Phosphorus (P)HardnessIron (Dissolved)360ChlorideAlkalinity0.32 Lead14.3FluorideTotal Acidity1.38 Manganese98SulfateFree Acidity0.08 Mercury (ppb)0.12CyanideOil0.0 NickelMBAS968Other (Specify)0.003 Selenium0.034Phenol (ppm)0.00 SilverTransported by: JWR0.7 Zinc

Received by: \_\_\_\_\_

Results in mg/l unless otherwise noted.

Transported by: \_\_\_\_\_

Received by: \_\_\_\_\_

## FOR LAB USE ONLY

Lab Number: 003391 Rec'd by: R. modiDate sample rec'd: 12-23-81 Time: 10:30

Date analysis completed: \_\_\_\_\_

Date results forwarded: FEB 10 1982Total Tests requested: 28 Tests run: \_\_\_\_\_Lab Section: Chem